ABSTRACT

The invention provides methods and compositions for azide tagging of biomolecules. In one embodiment of the invention, proteins are tagged by metabolic incorporation of prenylated azido-analog substrates. Examples of such analogs are azido farnesyl diphosphate and azido farnesyl alcohol. The azido moiety in the resulting modified proteins provides an affinity tag, which can be chemoselectively captured by an azide-specific conjugation reaction, such as the Staudinger reaction, using a phosphine capture reagent. When the capture agent is biotinylated, the resulting conjugates can be detected and affinity-purified by streptavidin-linked- HRP and streptavidin-conjugated agarose beads, respectively. The invention allows detection and isolation of proteins with high yield, high specificity, and low contamination without harsh treatment of proteins.